

Phenomenology of electroweakly interacting spin-1 dark matter with Sommerfeld enhancement

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Weakly Interacting Massive Particles (WIMPs) are leading candidates for dark matter and have been widely studied. However, direct detection experiments have placed stringent constraints on many WIMP models. Some scenarios, such as Higgsino, Wino, and minimal dark matter, can evade these constraints. In these models, the dark sector contains an $SU(2)_L$ multiplet, and the dark matter candidate is one of its components. Such candidates are typically assumed to be either spin-0 or spin-1/2. In this talk, I focus on a spin-1 electroweakly interacting dark matter model proposed in Ref. 2004.00884 and discuss its phenomenology, including the effects of Sommerfeld enhancement. We determine the mass spectrum of the new particles required to reproduce the measured value of the dark matter energy density and also discuss prospects for indirect detection.

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